

What Systems Engineers Do

A UIS Systems Engineer can work in the following fields:

- Software development: designing, building, validating, and maintaining software systems and applications.
- Data analysis: design and building of data analytical systems to extract insights of complex data using techniques like big data or artificial intelligence.
- Systems analysis: analyzing organization's computer systems and procedures to identify areas for improvement. They propose and implement solutions to enhance efficiency, security, and productivity within an organization's IT infrastructure.
- IT Management: manage and maintain an organization's IT infrastructure like datacenters, networks, and databases.



Curriculum of Systems Engineer

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|---|---|
| 1 <ul style="list-style-type: none">• Calculus I• Fundamentals of Programming• Basic Chemistry• Linear Algebra I• Sports and Physical Training• Language Workshop• University Life and Culture | 2 <ul style="list-style-type: none">• Calculus II• Citizenship Ethics• Physics I• Object Oriented Programming• Biology for Engineers• English I |
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- 3**
- Calculus III
 - Physics II
 - Discrete Mathematics
 - Data Structure and Analysis of Algorithms
 - English II

- 4**
- Differential equations
 - Physics III
 - Fundamentals of Electronics
 - Automata and Formal Languages
 - Databases I

- 5**
- Databases II
 - Digital Systems
 - Numerical Analysis I
 - Systems and Organizational Thinking
 - Business Management I

- 6**
- Statistics I
 - Computer Networks I
 - Computer Architecture
 - Web Programming
 - Information Systems

- 7**
- Statistics II
 - Software Engineering I
 - Computer Networks II
 - Artificial Intelligence I
 - Elective Courses

- 8**
- Operating Systems
 - Software Engineering II
 - Digital Simulation
 - Elective Courses

- 9**
- Graduation Project I
 - Engineering Economics
 - Free Choice Courses
 - Elective Courses

- 10**
- Graduation Project II
 - Business Economy
 - Elective Courses

More information about the program can be found on www.uis.edu.co
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SYSTEMS ENGINEERING

Institution of Higher Education subject to inspection and surveillance by the Ministry of National Education



www.uis.edu.co



SNIES: 698

Current Qualified Registry Resolution:

Res. 18039 of 28/09/2020 of the MEN

High Quality Accreditation: Res. 18039 of 28/09/2020 of the MEN

Title awarded: Systems Engineer

Duration of the program: 10 academic semesters

Program location: Bucaramanga

Institucional Information

98 research groups recognized by Colciencias

84 UIS patents, 12 of them international

More than **50%** of our tenured professors hold a **Ph.D. degree.**

276 UIS researchers recognized by Colciencias in different categories

7 artistic groups made up of students

Guatiguará is the most complete technology park in Colombia

Sports groups made up of students

Economic and financial incentives

University dining facilities



Student Profile

To be successful in this program, the applicant must have the following skills:

- Abstract reasoning.
- Perform mathematical calculation operations.
- Determine optimal efficiency conditions, troubleshoot.
- Access basic computer skills, software and hardware.
- Administrative and financial sciences.

Professional profile

The professional profile of a Systems Engineer at UIS corresponds to a professional capable of:

- Examining, formulating, analyzing, treating, and solving problems interacting with professional in other areas, identifying the main characteristic of those problems, understanding the requirements and constrains and proposing a solution based in a system model that relates coherently all components involved. Thus, ensuring an efficient solution using available technology infrastructure.
- Performing with the best professional quality and high ethical values his/her performance in his/her.



Professional life as a social, technical-scientific agent and administrative, under the following postulates:

Social Aget

A professional capable of disseminating and applying all levels of basic knowledge and specializations that facilitate good management and correct treatment of the information, the communications and automation as main inputs for the development of organizations. Thus, showing the benefits that they get when their app is done in adequate form.

Technical - Scientific

A professional capable of recognizing, analyzing, evaluating, developing and implementing through use of information technology, the communications and automation, systems for specific use or general in all areas of knowledge.

Administrative

A professional who participates in the evaluation, acquisition and management of all computing resources, communications and automation that support the organizations. A professional capable of conceiving and developing technology-based companies; studies, plans, evaluates and carries out projects with preference in the fields of computer science, communications and automation productive processes.